

## (12) INTERNATIONAL APPLICATION PUBLISHED UNDER THE PATENT COOPERATION TREATY (PCT)

(19) World Intellectual Property  
Organization  
International Bureau



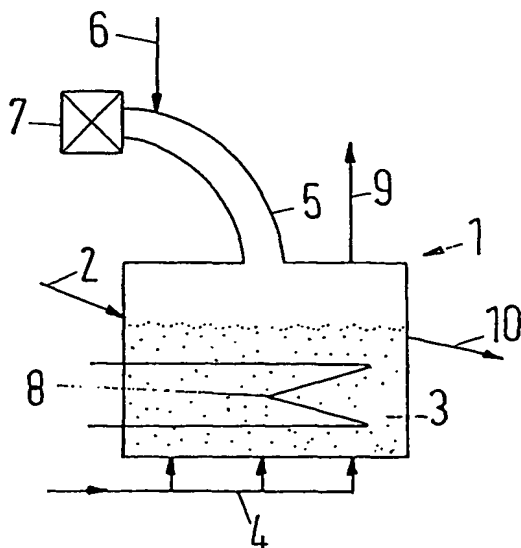
(43) International Publication Date  
8 July 2004 (08.07.2004)

PCT

(10) International Publication Number  
**WO 2004/056471 A1**

- (51) International Patent Classification<sup>7</sup>: **B01J 19/12**,  
8/38, 8/36 [DE/DE]; Lindenweg 13, 64409 Messel (DE). **GERDES**,  
Thorsten [DE/DE]; Talblick 4, 95448 Bayreuth (DE).
- (21) International Application Number: PCT/EP2003/013162 (74) Agent: **KEIL & SCHAAFHAUSEN**; Cronstettenstrasse  
66, 60322 Frankfurt am Main (DE).
- (22) International Filing Date: 24 November 2003 (24.11.2003) (81) Designated States (*national*): AE, AG, AL, AM, AT, AU,  
AZ, BA, BB, BG, BR, BW, BY, BZ, CA, CH, CN, CO,  
CR, CU, CZ, DE, DK, DM, DZ, EC, EE, EG, ES, FI, GB,  
GD, GE, GH, GM, HR, HU, ID, IL, IN, IS, JP, KE, KG,  
KP, KR, KZ, LC, LK, LR, LS, LT, LU, LV, MA, MD, MG,  
MK, MN, MW, MX, MZ, NO, NZ, OM, PG, PH, PL, PT,  
RO, RU, SC, SD, SE, SG, SK, SL, SY, TJ, TM, TN, TR,  
TT, TZ, UA, UG, US, UZ, VC, VN, YU, ZA, ZM, ZW.
- (25) Filing Language: English (84) Designated States (*regional*): ARIPO patent (BW, GH,  
GM, KE, LS, MW, MZ, SD, SL, SZ, TZ, UG, ZM, ZW),  
Eurasian patent (AM, AZ, BY, KG, KZ, MD, RU, TJ, TM),  
European patent (AT, BE, BG, CH, CY, CZ, DE, DK, EE,  
ES, FI, FR, GB, GR, HU, IE, IT, LU, MC, NL, PT, RO, SE,  
SI, SK, TR), OAPI patent (BF, BJ, CF, CG, CI, CM, GA,  
GN, GQ, GW, ML, MR, NE, SN, TD, TG).
- (26) Publication Language: English
- (30) Priority Data: 102 60 742.7 23 December 2002 (23.12.2002) DE (71) Applicant (*for all designated States except US*): **OUT-  
OKUMPU, Oyj** [FI/FI]; Riihitontuntie 7, FIN-02200 Es-  
poo (FI).
- (71) Applicant (*for US only*): **STOLARSKI, Kristina** (ex-  
ecutrix for the deceased inventor) [DE/DE]; Neuroth 4,  
61440 Oberursel (DE).
- (72) Inventor: **STOLARSKI, Eberhard** (deceased).
- (72) Inventors; and
- (75) Inventors/Applicants (*for US only*): **STRÖDER**,  
Michael [DE/DE]; Dürerstrasse 77, 61267 Neu-Anspach  
(DE). **ANASTASIJEVIC, Nikola** [DE/DE]; Zum Nid-  
dersteg 11, 63674 Altenstadt (DE). **WERNER, Dietrich**
- Published:  
— with international search report  
— before the expiration of the time limit for amending the  
claims and to be republished in the event of receipt of  
amendments
- For two-letter codes and other abbreviations, refer to the "Guid-  
ance Notes on Codes and Abbreviations" appearing at the begin-  
ning of each regular issue of the PCT Gazette.

(54) Title: METHOD AND PLANT FOR THE THERMAL TREATMENT OF GRANULAR SOLIDS IN A FLUIDIZED BED



(57) Abstract: This invention relates to a method for the thermal treat-  
ment of granular solids in a fluidized bed (3, 3a) which is located in a  
fluidized-bed reactor (1, 1a, 38), wherein microwave radiation is fed  
into the fluidized-bed reactor (1, 1a, 38) through at least one wave  
guide (5, 46), and to a corresponding plant. To avoid depositions in  
the wave guide (5, 46), a gas stream is fed into the fluidized-bed reac-  
tor (1, 1a, 38) through the same wave guide (5, 46).